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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,990	09/28/2001	Claude E. Tew	TI-31213	5628

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EXAMINER

ROJAS, OMAR R

ART UNIT PAPER NUMBER

2874

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/966,990

Applicant(s)

TEW, CLAUDE E.

Examiner

Omar Rojas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Peri d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-45, 47-56 and 58-70 is/are rejected.
- 7) ☒ Claim(s) 46 and 57 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3&4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on July 2, 2002 and September 28, 2001 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Drawings

2. This application appears to lack formal drawings. The informal drawings filed in this application are acceptable for examination purposes only. When the application is allowed, applicant will be required to submit new formal drawings.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 416. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

5. Claims 11 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 11 and 28 appear to be directed to the embodiments shown in Figs. 13-14 which do not show a retro-reflector. Thus, there is insufficient antecedent basis for the recitation of a retro-reflector in claims 11 and 28.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1, 5-8, 10, 12, 16-17, 42, 43, 45, 47, and 51-52 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,466,711 to Laor et al. ("Laor").**

Regarding claims 1, 5-8, 10, 12, 16-17, 42, 43, 45, 47, and 51-52, Laor discloses (in Fig. 8) first and second input/output fibers (376); a retro-reflector (324); first, second, third, and fourth deflectors (322) forming a single array of flat reflective surfaces, and operable to perform in the manner recited.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-3, 9, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laor.

Regarding claims 2-3, 9, and 44, the examiner incorporates the previous remarks under section 102.

Thus, Laor only differs from claims 2-3, 9, and 44 in that Laor does not expressly disclose that the retro-reflector comprises at least two or three separate retro-reflectors (324) and/or at least one of the deflectors (322) comprises an array of reflective surfaces.

However, the examiner notes that separation of parts has been held as unpatentable, *Nerwin v. Erlichman*, 168 USPQ 177, Decided May 29, 1969, U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences. Furthermore, duplications of parts has also been held as obvious, *St. Regis Paper Co. v. Bemis Co.*, 198 USPQ 8 (7th Cir. 1977).

Therefore, no patentable weight is given to the limitations recited by claims 2-3, 9, and 44 since they merely recite a separation of parts (the retro-reflector and deflectors) and/or a duplication of those parts.

10. Claims 4, 13-15, and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laor.

Regarding claims 4, 13-15, and 48-50, the examiner incorporates the previous remarks under section 102

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Thus, Laor only differs from claims 4, 13-15, and 48-50 in that Laor does not expressly disclose that the retro-reflector (324) and/or the deflectors (322) comprise a curved, spherical, or aspherical reflective surface.

However, the examiner submits that it is well known in the art that curved, spherical, or aspherical reflective surfaces are advantageous over flat reflective surfaces for focusing light signals. One of ordinary skill in the art would have wanted to expressly modify Laor to use a curved, spherical, or aspherical reflective surfaces in order to improve the focusing of the light signals between the reflective surfaces (324, 322)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify Laor to obtain the invention specified by claims 4, 13-15, and 48-50.

11. Claims 18, 22-25, 27, 29, 35-38, 53, 54, 56, 58, and 64-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laor as applied to claims 1, 5-8, 10, 12, 16-17, 42, 43, 45, 47, and 51-52 above, and further in view of U.S. Patent No. 6,097,859 to Solgaard et al. ("Solgaard").

Regarding claims 18, 22-25, 27, 29, 35-38, 41, 53, 54, 56, 58, and 64-67, the examiner incorporates the previous remarks under section 102.

Thus, Laor differs from claims 18, 22-25, 27, 29, 35-38, 41, 53, 54, 56, 58, and 64-67 in that Laor does not disclose using a grating as a signal separator to separate the first optical signal into at least two components.

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Solgaard, on the other hand, does teach using a grating (42, 44) to separate an optical signal into multiple components for use in a wavelength division multiplexing (WDM) system. See Solgaard at columns 3-4.

The ordinary skilled artisan would have found it desirable to combine Laor with a grating to use as a signal separator in order to accomodate multiple wavelength channels in a WDM system, for example, thereby increasing the information capacity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify

Laor in view of Solgaard to obtain the invention specified by claims 18, 22-25, 27, 29, 35-38, 41, 53, 54, 56, 58, and 64-67.

12. Claims 19-20, 26, 33-34, 55, 62, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laor in view of Solgaard.

Regarding claims 19-20, 26, 33-34, 55, 62, and 63 the examiner incorporates the previous remarks under this section.

Thus, Laor in view of Solgaard further differs from claims 19-20, 26, 33-34, 55, 62, and 63 in that Laor in view of Solgaard does not expressly disclose that the retro-reflector of Laor can comprise at least two or three separate retro-reflectors (324) and/or at least one of the deflectors (322) of Laor can comprise an array of reflective surfaces.

However, the examiner notes that separation of parts has been held as unpatentable, *Nerwin v. Erlichman*, 168 USPQ 177, Decided May 29, 1969, U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences. Furthermore, duplications of parts has also been held as obvious, *St. Regis Paper Co.*

v. Bemis Co., 198 USPQ 8 (7th Cir. 1977).

Therefore, no patentable weight is given to the limitations recited by claims 19-20, 26, 33-34, 55, 62, and 63 since they merely further recite a separation of parts (the retro-reflector and deflectors) and/or a duplication of those parts.

13. Claims 21, 30-32, and 59-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laor in view of Solgaard.

Regarding claims 21, 30-32, and 59-61 the examiner incorporates the previous remarks under this section.

Thus, Laor in view of Solgaard only differs from claims 21, 30-32, and 59-61 in that Laor does not expressly disclose that the retro-reflector (324) and/or the deflectors (322) comprise a curved, spherical, or aspherical reflective surface.

However, the examiner submits that it is well known in the art that curved, spherical, or aspherical reflective surfaces are advantageous over flat reflective surfaces for focusing light signals. One of ordinary skill in the art would have wanted to expressly modify Laor in view of Solgaard to use a curved, spherical, or aspherical reflective surfaces in order to improve the focusing of the light signals between the reflective surfaces (324, 322)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify Laor in view of Solgaard to obtain the invention specified by claims 21, 30-32, and 59-61.

14. Claims 39-41 and 69-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laor in view of Solgaard.

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Regarding claims 39-41 and 69-70 the examiner incorporates the previous remarks under this section.

Thus, Laor in view of Solgaard only differs from claims 39-41 and 69-70 in that Solgaard does not expressly disclose that his signal separator (42, 44) may comprise a prism, a hologram, or an arrayed waveguide grating (AWG).

However, the examiner submits that it is well known in the art that prisms, holograms, and AWGs are useful for separating light signals. Any of these devices could alternatively be used in place of, or in addition to, the grating (42, 44) expressly disclosed by Solgaard to provide alternative, or additional, signal separating means.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify Laor in view of Solgaard to obtain the invention specified by claims 39-41 and 69-70.

Allowable Subject Matter

15. Claims 46 and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose or suggest, alone or in combinations, an optical switch having all the recited features of claims 46 and 57 and wherein at least one of the first, second, or third deflectors comprises a fixed reflective surface. Such an arrangement is shown in Figs. 13-14 of the drawings.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,330,102 to Daneman et al. discloses similar prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (703) 305-8528 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hemang Sanghavi, can be reached on (703) 305-3484. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 for regular communications. The examiner's personal work fax number is (703) 746-4751.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Omar Rojas
Patent Examiner
Art Unit 2874

or
March 10, 2003


HEMANG SANGHAVI
PRIMARY EXAMINER